NETGEAR

CWGE111
802.11g WiFi Receiver
User Manual

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San Jose, CA 95134
USA

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CWGE111 Initial Setup

1

This chapter includes the following topics:

- About the CWGE111 802.11g WiFi Receiver
- Hardware Setup
- LED Descriptions
- Preconfiguration Setup
- Associating the Wireless Access Point
- First Time Setup

About the CWGE111 802.11g WiFi Receiver

Congratulations on purchasing your NETGEAR CWGE111 802.11g WiFi Receiver.

Hardware Setup

Figure 1. CWGE111 WiFi Receiver

To connect your modem:

1. Attach the provided antenna to the antenna connector.
2. Insert the provided power adapter into the DC socket on the receiver.
3. Plug the power adaptor into an electric wall socket.
4. Connect one end of the provided Ethernet cable to the LAN port on the receiver, and the other end to the Ethernet port on the computer.

LED Descriptions

Figure 2. CWGE111 LED Status Indicators

LED	Description
Power - PWR	**Green**: Power is on. **Off**: Power is off.
Status - RDY	**Green**: Device is booted. **Off**: Device is not booted.
Ethernet - ENET	**Green**: Ethernet is connected. **Blinking**: Sending/Receiving data. **Off**: Ethernet is not connected.
Signal bars	**Green**: Associated with an access point. **Back-and-forth**: Searching access point. **Blinking**: Acquiring IP address. **Off**: Not associated with an access point. The number of lit signal bars depends on the strength of the received signal. More lit bars indicate a stronger signal.

Preconfiguration Setup

Before you begin, be sure of the following:

1. You have an active ISP account and can access the Internet.

   Open a web browser (e.g, Internet Explorer, Mozilla Firefox, etc.) and visit an Internet web site. If you successfully see the web site, you are connected. If not, you need to establish an active Internet connection before proceeding with the installation.

2. Preconfigure your computer to automatically obtain an IP address.

   If not already done, set up the LAN interface on your computer to obtain an IP address automatically. If you are already set up for automatic IP, you should encounter no problems with your set up.

To obtain an automatic IP address:

1. Go to the **Start** menu.
2. Open the **Control Panel** and then **Network Connections**.
3. Right click on the **Local Area Connection** icon:
   a. Choose **Properties.**
   b. Double-click on **Internet Protocol (TCP/IP)** from the list.
   c. Check the **Obtain IP address automatically** radial button.
   d. Click **OK** to confirm the change.

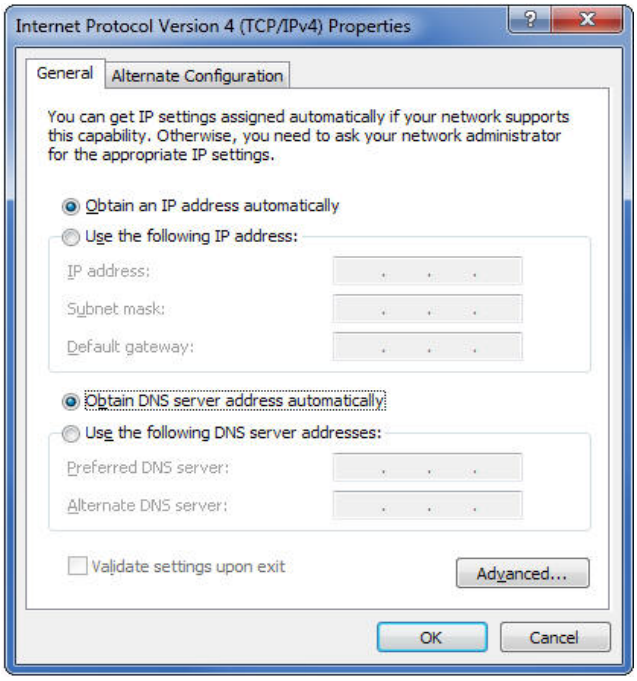

Internet Protocol Version 4 (TCP/IPv4) Properties
General
Alternate Configuration
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Validate settings upon exit
Advanced...
OK
Cancel

Figure 3. LAN interface configuration for automatic IP addressing

First Time Setup

Once your system is preconfigured, when you plug in your CWGE111 802.11g WiFi Receiver User Manual, you should be automatically redirected to the connection page.

If this page (Figure 4) does not automatically appear, open a browser and enter http://192.168.20.1/ in the address field.

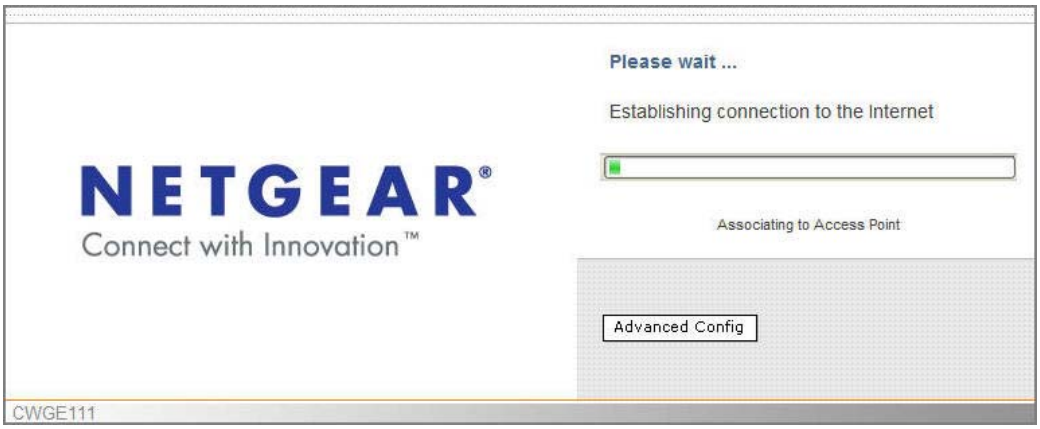


Figure 4. Opening Connection Page

Connection Failed

Initially you may get a Connection Failed message. If this happens, click the **Advanced Configuration** button and use the options to set the correct access point parameters.

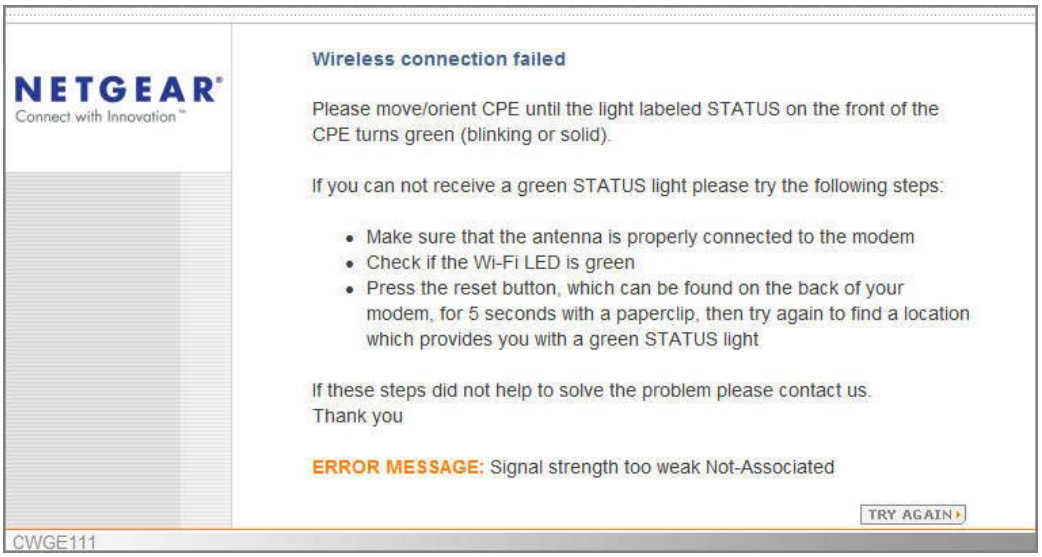

NETGEAR®
Connect with Innovation™
Wireless connection failed
Please move/orient CPE until the light labeled STATUS on the front of the CPE turns green (blinking or solid).
If you can not receive a green STATUS light please try the following steps:
Make sure that the antenna is properly connected to the modem
Check if the Wi-Fi LED is green
Press the reset button, which can be found on the back of your modem, for 5 seconds with a paperclip, then try again to find a location which provides you with a green STATUS light
If these steps did not help to solve the problem please contact us.
Thank you
ERROR MESSAGE: Signal strength too weak Not-Associated
TRY AGAIN
CWGE111

Figure 5. Connection Failed

Associating the Wireless Access Point

When you click the Advanced Options button, you will see the CPE Setup screen:

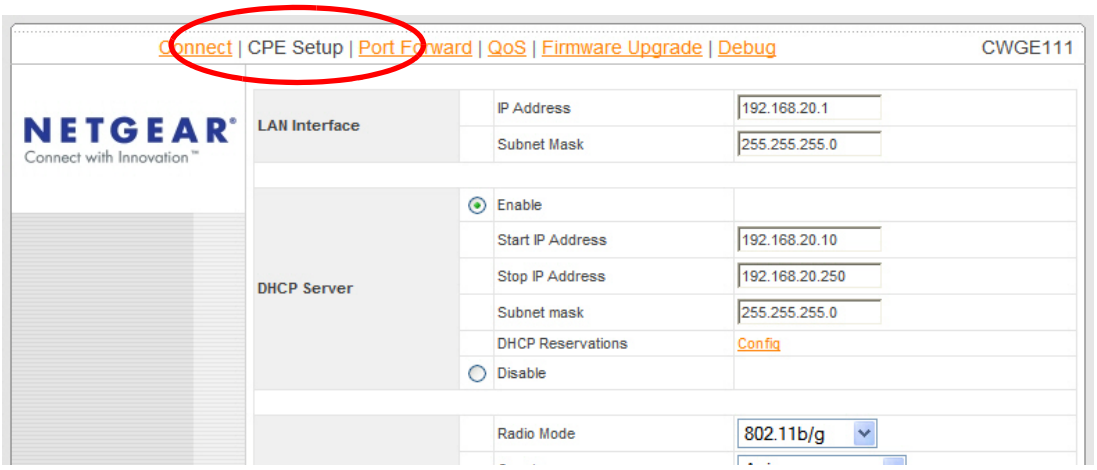


Figure 6. CPE Setup Screen

To Associate the Access Point:

1. Click the **Advanced Option** button.
1. On the **CPE Setup** screen, locate the Wireless Settings options.
2. In the **SSID** field, input the access point SSID (also called the network name). The default SSID is CMCC_Bridge, and cannot be changed.
3. Select the **Authentication** method. According to the Access Point settings you are associating to, you might need to choose a different Authentication setting.
4. Enter the **Encryption Key** if a Static WEP or WPA/WPA2-Personal is selected for Authentication. The default authentication is Open and does not require an encryption key.

   Additional options include 802.1x with dynamic WEP key and WPA/WPA2-Enterprise. You do not need to use these settings unless instructed to do so by your ISP.
5. Click the **Save** button at the bottom of the screen.

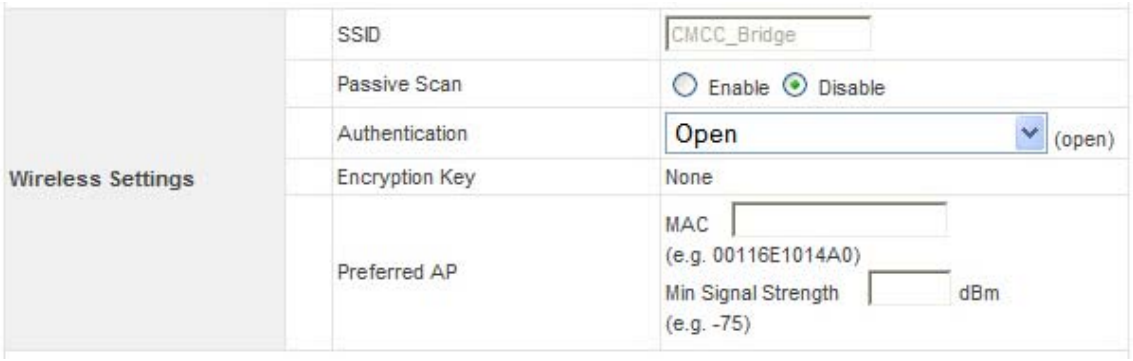


Figure 7. Associate wireless access points

6. Click the **Connect** link on the top bar.
7. Then click the **Connect** button to associate with the access point.

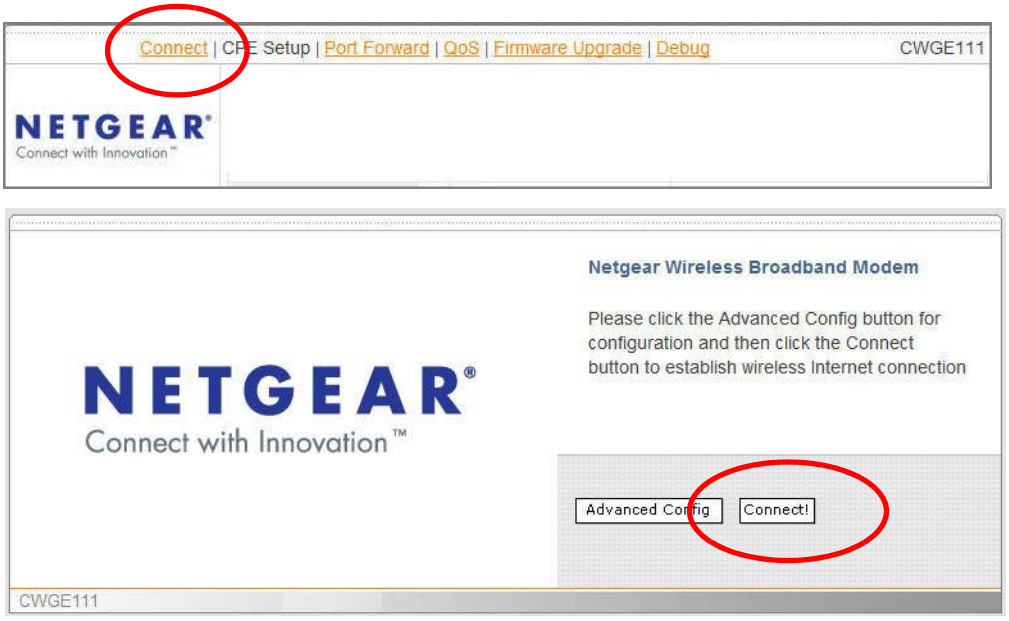

Connect | CPE Setup | Port Forward | QoS | Firmware Upgrade | Debug
CWGE111
NETGEAR
Connect with Innovation™
Netgear Wireless Broadband Modem
Please click the Advanced Config button for configuration and then click the Connect button to establish wireless Internet connection
NETGEAR
Connect with Innovation™
Advanced Config
Connect!
CWGE111

Figure 8. Establishing Connection to the Internet

Connection Established

At this point, you are associated with the access point. You can now close the web browser, and open a new one to start web browsing.

Figure 9. Connection Established

Advanced Configuration

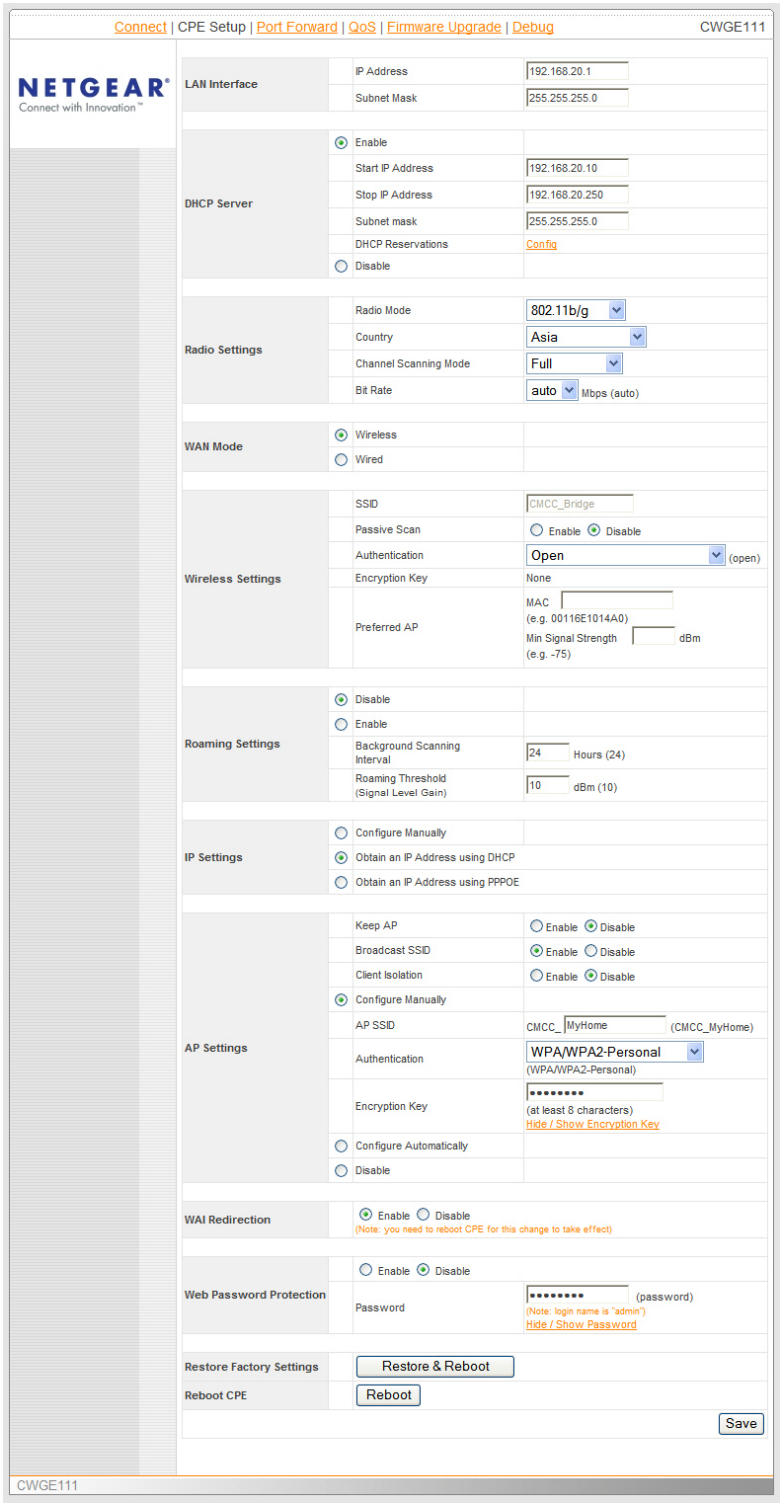
2

This chapter discusses the following topics:

- CPE Setup Screen & Options
- LAN Interface Settings
- DHCP Server Settings
- Radio Settings
- WAN Mode Settings
- Wireless Settings
- Roaming Settings
- IP Settings
- AP Settings
- WAI Redirection Settings
- Web Password Protection Settings
- Restore and Reboot
- Port Forwarding
- DMZ Host
- QoS
- Firmware Upgrade
- Debug and System Information

CPE Setup Screen & Options

Advanced Options on the CPE Setup screen allow you to enter access point parameters.



LAN Interface Settings

Configure the LAN Interface Settings:

1. Set the IP Address.

   Configure the LAN interface's IP address and subnet mask.

   Default setting: **192.168.20.1**
2. Set the Subnet Mask.

   Default setting: **255.255.255.0**
3. Click **SAVE** at the bottom of the screen to apply the settings.

DHCP Server Settings

Enable the DHCP Server Settings:

1. Select the Enable radio button.

   Configure and enable the built-in DHCP server. If enabled, the IP address range can be configured.

2. Set the parameters:
   - **a.** Start IP Address
   - **b.** Set the Stop IP Address
   - **c.** Set the Subnet Mask

3. Set the DHCP Reservations.

   Configure DHCP Reservation if there is a need to assign a specific IP address to a specific MAC address using DHCP.

   - **a.** Click the **Config** link and set the options on the DCHP Reservations screen.

4. Click **SAVE** at the bottom of the screen to apply the settings.

Disable the DHCP Server:

1. Select the **Disable** radio button.
2. Click **SAVE** at the bottom of the screen to apply the settings.

Radio Settings

Configure the Radio Settings:

1. Select the Radio mode.

   This allows you to choose between radio modulations support, (for example, 802.11b/g, 802.11g only, 802.11b, etc.). The available settings depend on the Wi-Fi module installed on the device.

   a. 802.11b/g

   b. 802.11b only

   c. 802.11g only

2. Select the Country.

   Select a country location where you are using the device. Available channels and output power should be adjusted accordingly.

3. Select the Channel Scanning Mode.

   Choose from one of the channel options to scan. If **Single** is selected, the **Scanned Channel** option shows.

   a. Single

   b. Ch. 1, 6 & 11

   c. Full

4. Select the Bit Rate (Mbps).

   Use this option to fix the 802.11 transmit bit rate. Available options depend on the Radio Mode chosen. If auto is chosen, the device will choose the best bit rate dynamically and automatically.

   a. auto

   b. options from 1 to 54 Mbps

5. Click **SAVE** at the bottom of the screen to apply the settings.

WAN Mode Settings

Configure the WAN Mode Settings:

1. Select the WAN mode used to connect to the Internet.

   This option specifies your Internet connection source.

   a. Wireless: This is the default setting. Select Wireless if you are using the device as a Wi-Fi receiver.

   b. Wired: Select this mode when you do not have a Wi-Fi Internet Service Provider, or do not want a wireless connection.

2. Click **SAVE** at the bottom of the screen to apply the settings.

Wireless Settings

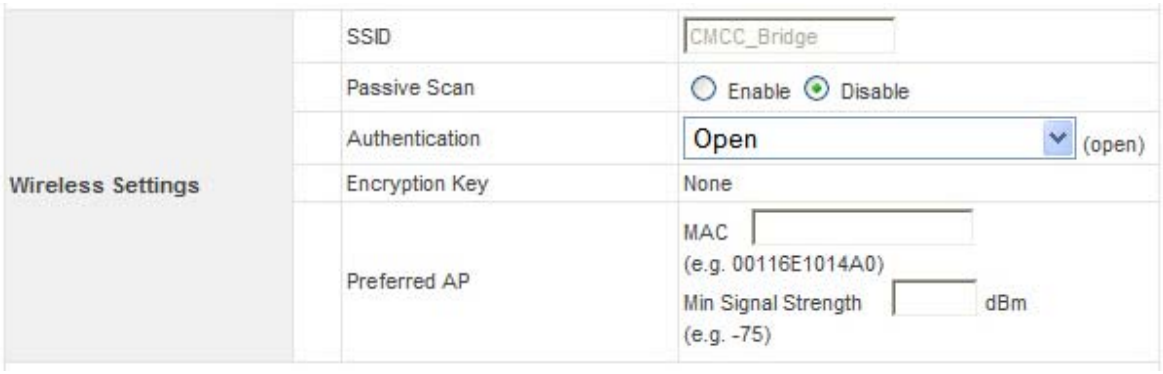


Figure 10. Wireless Setting

Configure the Wireless Settings:

1. Set the SSID (network name):

   Use this field to set the SSID / ESSID / Network Name of the wireless network to which you want to connect.

   The default SSID is CMCC_Bridge. The SSID name cannot be changed.

2. Passive scan:
   - **a.** Enable: With this option the wireless WAN will only perform a passive scan.
   - **b.** Disable: With this option the wireless WAN will perform a passive and active scan.
3. Authentication:

   In the Authentication drop-down menu, select a value that matches the authentication setting value specified by your Wi-Fi Internet Service Provider. Then, if applicable, enter the Encryption Key provided. The selection should match the access point settings you are connecting to.

> **Note:** Data transferred is encrypted under all modes except in Open mode.

   - **a.** Open: Default authentication is Open and does not require an encryption key.
   - **b.** Static WEP Key: You should enter an encryption key in the Encryption Key field.
   - **c.** 802.1x with dynamic WEP key: You do not need to use 802.1x unless instructed to do so by your ISP.
   - **d.** WPA/WPA2-Enterprise: You do not need to use WPA/WPA2-Enterprise unless instructed to do so by your ISP.
   - **e.** WPA/WPA2-Personal: Entering an encryption key in the Encryption Key field is highly recommended.

4. Encryption Key:

   The encryption key must be at least 8 characters.

   a. Hide/Show Encryption Key: this allows you to show or hide the actual value of the password. (e.g., ***** vs. 12345)

5. Preferred AP:

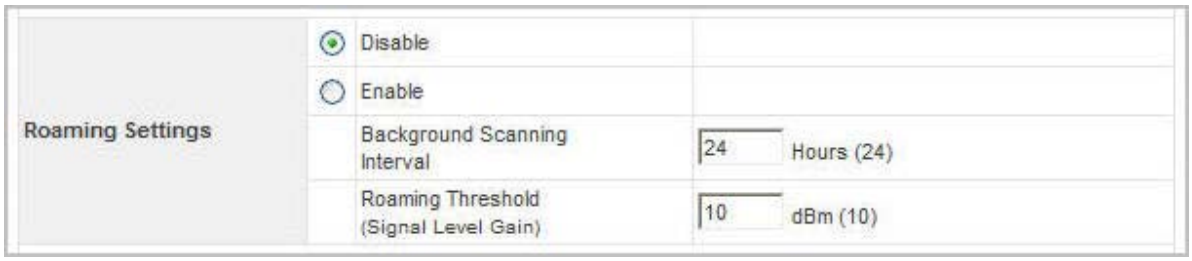
   a. MAC: The MAC address of a preferred access point (AP) can be entered here. When the preferred access point is found and its signal strength is higher than the Min Signal Strength, it will connect to this preferred access point, even when other access points are found having higher signal strength or the same SSID.

   b. Minimum Signal Strength:

   c. APs with matching SSID:

6. Click **SAVE** at the bottom of the screen to apply the settings.

Roaming Settings



Configure the Roaming Settings:

1. Roaming Setting Options:

   Used to configure and enable roaming among APs with the same SSID and authentication method.

   a. Disable

   b. Enable

2. Background Scanning Interval:

   The time interval between background scans.

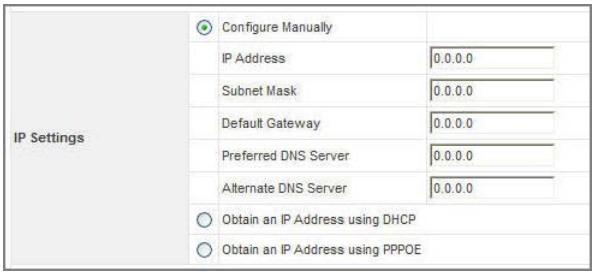
3. Roaming Threshold (Signal Level Gain):

   If there is another AP with a signal level greater than the signal level of the connected AP by the specified value, it reconnects to the AP with a better signal.

IP Settings

Configure the IP Settings:

The IP address can be obtained automatically or configured manually.

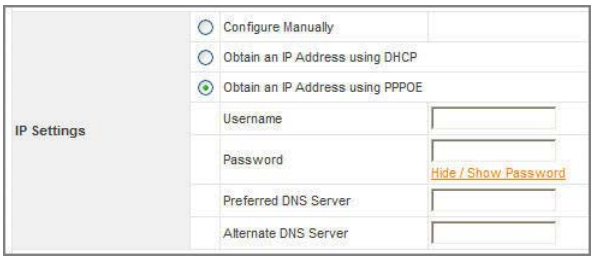


1. Configure Manually:
   a. IP Address
   b. Subnet mask
   c. Default Gateway
   d. Preferred DNS Server
   e. Alternate DNS Server
2. Obtain an IP address using DHCP:

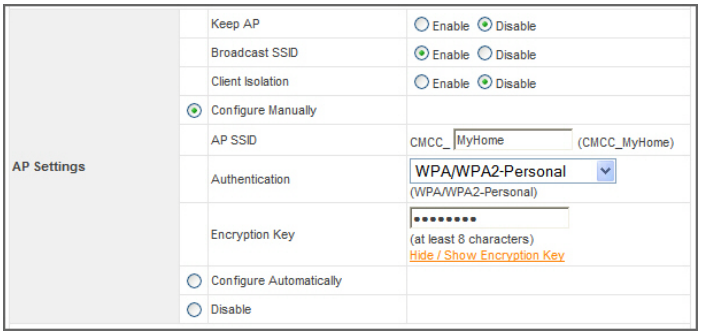
   Choose this option to configure and enable/disable the built-in DHCP server. When selected, the IP address range can be configured. Configure DHCP Reservation if there is a need to assign a specific IP address to a specific MAC address using DHCP. For additional information see *"DHCP Server Settings"* on page 13.
3. Obtain an IP address using PPPoE:

   Choosing this option requires the following information:

   a. Username
   b. Password
   c. Preferred DNS Server
   d. Alternate DNS Server



AP Settings



Configure the AP Settings:

Available Access Point (AP) settings for the Integrated Wi-Fi Access Point functionality are:

1. Keep AP:
   a. Enable: This option keeps the Wi-Fi Access Point always on, even if there is no connection to the Wi-Fi Internet Service Provider.
   b. Disable: This option disables the Integrated Wi-Fi Access Point functionality.
2. Broadcast SSID:
   a. Enable: With this option enabled, the configured SSID will be broadcast so that it can be detected by an SSID scan.
   b. Disable: The configured SSID will not be broadcast so that it cannot be detected by an SSID scan. To connect with the access point, the SSID needs to be known by the client.
3. Client Isolation:
   a. Enable: This prevents wireless clients connected to the AP from communicating with each other.
   b. Disable: This allows wireless clients connected to the AP to communicate with each other.
4. Configure Manually:

   This option requires manual configuration of the SSID, Authentication, and Encryption Key values corresponding to the Access Point.

   a. SSID: In manual configuration mode, the SSID is manually entered. The default SSID is CMCC_MyHome; "MyHome" can be changed.
   b. Authentication: It can be one of three configurable values:
      - Open: No Encryption Key is necessary.
      - Static WEP Key: A 64- or 128-bit Encryption Key is required, and can be entered in either an ASCII or HEX representation.
      - WPA/WPA2-Personal: An Encryption Key, of at least 8 characters, is required. The default authentication is **WPA/WPA2-Personal**, and the default encryption key is **CMCC1234**.

5. Configure Automatically:

   The SSID, Authentication, and Encryption Key values corresponding to the Access Point are automatically configured to be the same as the respective values that correspond to the ISP's network.

   With the Access Point Configuration set to Configure Automatically, the SSID, Authentication, and Encryption Key values of the Integrated Wi-Fi Access Point will be configured to be the same as in the Wireless Settings section.

   Note: *In the Wireless Settings section, if Authentication is set to either 802.1x with dynamic WEP key or WPA/WPA2-Enterprise, then the Configure Automatically option of the Access Point Configuration becomes unavailable, because the Integrated Wi-Fi Access Point functionality currently does not support authentication via the 802.1x with dynamic WEP key and WPA/WPA2-Enterprise methods.*

6. Disable:

   This option disables the Access Point.

WAI Redirection Settings

Configure the WAI Redirection Settings:

1. Enable:

   With WAI Redirection, if the device is not connected to an access point, and the user is accessing an Internet web site, the settings control whether to redirect the web access to the web admin interface page or not.

2. Disable:

   If this is disabled and the device is not connected, the browser will show a web access error message. The user can still access the web admin interface by accessing the device's LAN IP address.

   By default, the LAN IP address is set to http://192.168.20.1.

Web Password Protection Settings

Configure the Web Password Protection Settings:

1. Web Password Protection sets the password to protect the web user interface:
   a. Enable: sets the Password to protect the web user interface.
   b. Disable: disables password protection.
2. Password:

   By default, the login account is set to **admin** and password is set to **password**.

Restore and Reboot

When this option is clicked, factory default settings are restored and the unit restarts.

Restore to Factory Default:

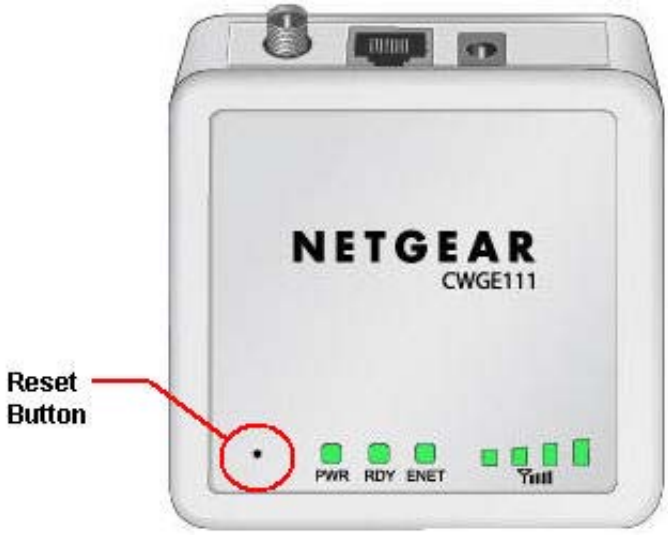
There are two ways to restore the 802.11g WiFi Receiver to default settings.

1. Click the **Restore** and **Reboot** button.

   If you can access the web admin interface, go to the CPE Setup page, and click the Restore and Reboot button. When this button is clicked, the factory default settings to restored and the unit automatically restarts.

2. Press the **Reset** button on the unit.

   If you cannot access the admin interface, you can power up the unit and wait for about 3 minutes. Then, using a pin or paperclip, press the **Reset Button** at the top of the unit and hold it for 5 seconds. The unit restores the settings to factory default and automatically reboot the unit.



Reboot the CWGE111

1. Click the **Reboot** button from the admin interface.

   The 802.11g WiFi Receiver will automatically restart.

Port Forwarding

1. Service Port Range:

   Enter a port or a range of ports that you would like to forward.

2. Protocol:

   This is the protocol for the above port(s) forwarding. You should select at least one protocol between TCP and UDP.

3. IP Address:

   The IP address that you would like the traffic forwarded to.

4. Del:

   Clicking the button deletes the corresponding rows of port forwarding rules.

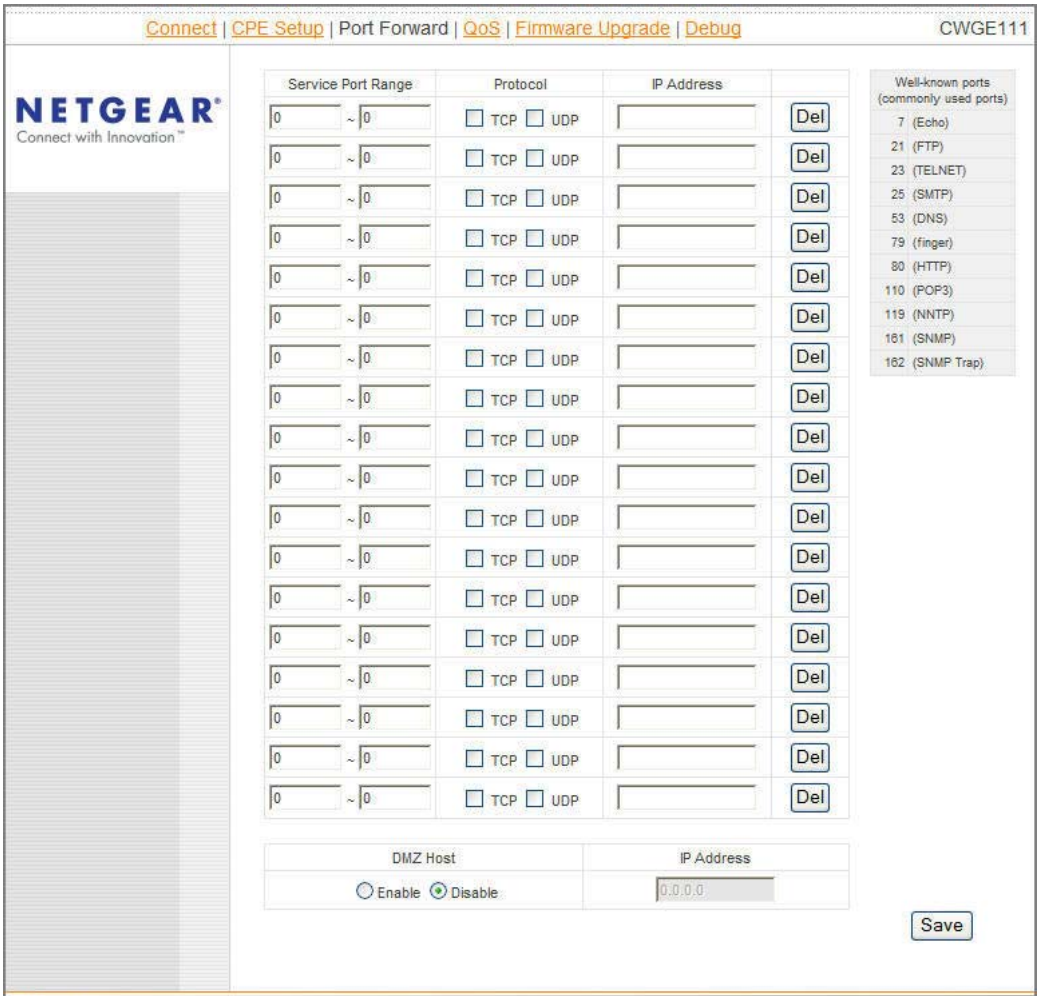


Figure 11. Port Forwarding

DMZ Host

Below the port forwarding table is an option called DMZ Host. When this function is enabled, the 802.11g WiFi Receiver becomes a DMZ device. You can enter an IP address, which is the IP address of the device exposed to the Internet.

The purpose of a DMZ is to make sure all external users can access any ports on the device, so that users do not need to set up port forwarding, and Internet traffic can directly reach internal devices.

The following table shows some well-known ports that are officially registered with IANA.

Port Number	Description	Protocol
7	Echo	TCP, UDP
21	FTP	TCP
23	TELNET	TCP
25	SMTP	TCP, UDP
53	DNS	TCP, UDP
79	Finger	TCP
80	HTTP	TCP, UDP
110	POP3	TCP
119	NNTP	TCP
161	SNMP	TCP, UDP
162	SNMP Trap	TCP, UDP

QoS

1. Target:

   To choose whether it is an incoming (Source) or outgoing (Destination) traffic that should be controlled by the service.

2. Service Port Range:

   Enter a port or a range of ports that would like to be controlled by the service.

3. Protocol:

   The Protocol for the above port(s). You should select at least one protocol between TCP and UDP.

4. IP Address:

   The IP address that you would like the traffic to be controlled by the service.

5. Priority:

   There are three choices for service priority: Background, Video and Voice. By choosing Default, priority will be automatically adjusted.

6. Del:

   Clicking the **Delete** button deletes the corresponding rows of QoS rules.

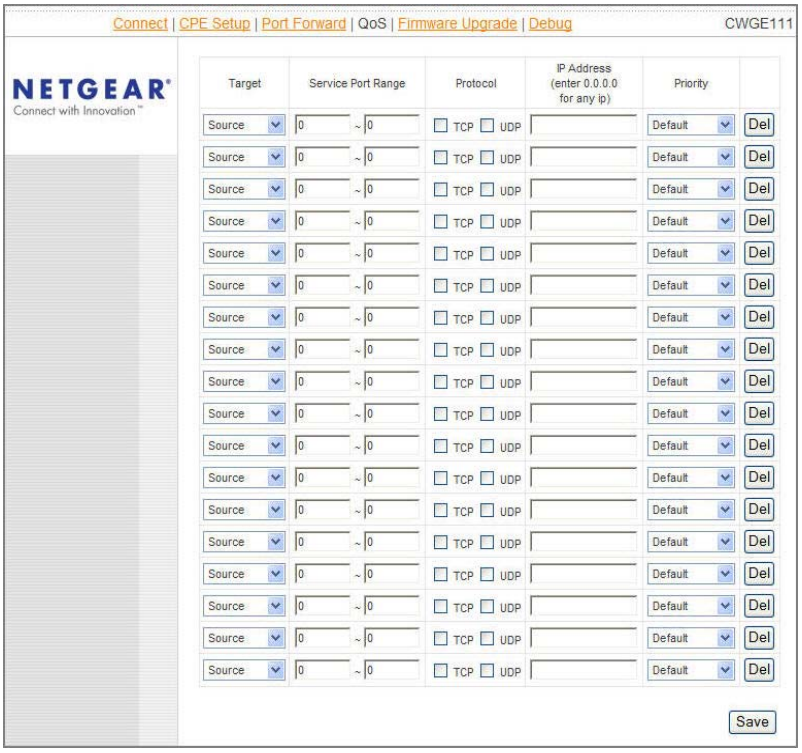


Figure 12. QoS

Firmware Upgrade

The 802.11g WiFi Receiver can check whether a newer firmware (the software running on the unit) is available.

However, it is recommended that you do not update the firmware unless specifically instructed by your ISP to do so. When a firmware upgrade is needed, your ISP will either give you instructions or they will upgrade the firmware remotely.

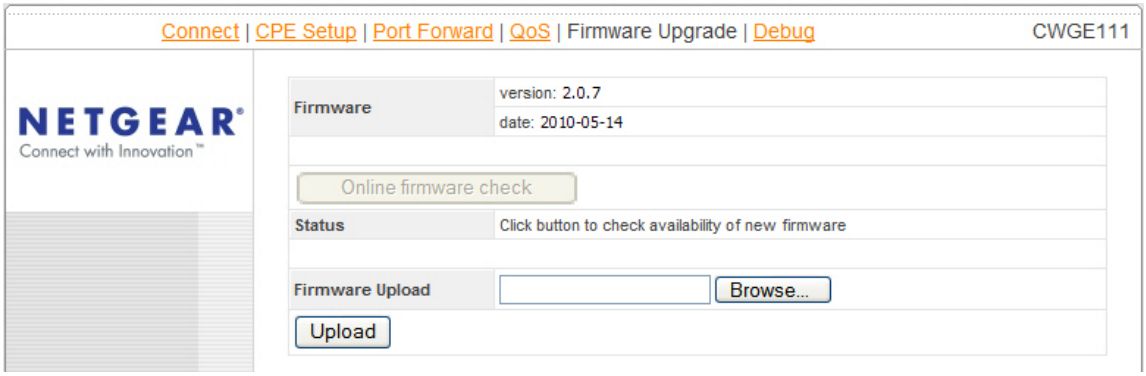


Figure 13. Firmware tab showing system information

Tip: It is highly recommended that you download the configuration file for backup purposes before doing a firmware upgrade. The download directory link can be found on the bottom of the Debug and System Information screen. See *"Debug and System Information"* on page 29.

Debug and System Information

To download the dump and configuration file click the link at the bottom of the debug screen. If you encounter issues and need to contact the Netgear Support Team, please download the file first, and attach it with a description of the issue you encountered.

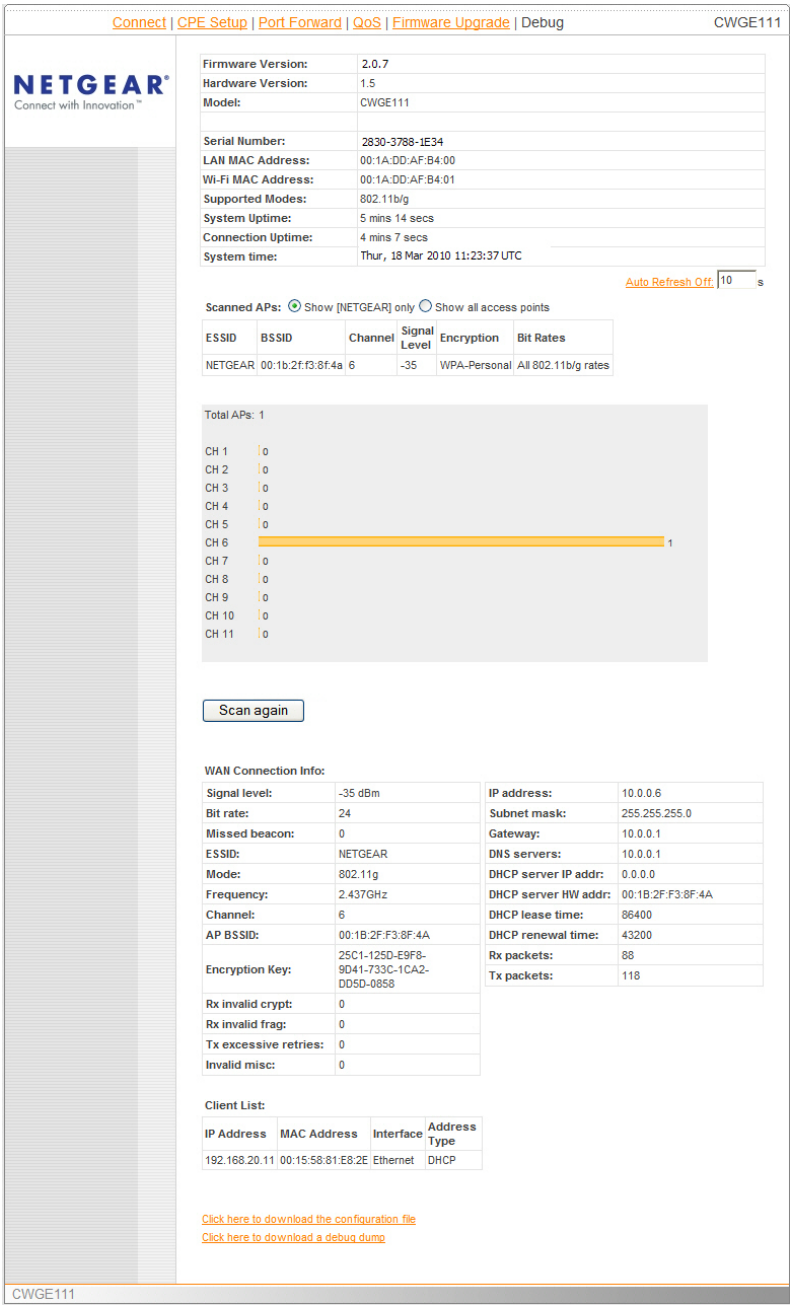


Figure 14. Debug tab showing the system information

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